

REMARKS

Claims 1, 7-9 and 18-20 are amended. Claim 10 is cancelled, and no claims are added. Hence, Claims 1-9 and 11-25 are pending in the Application. Support for the claim amendments is found at least in paragraph [0033] of the specification.

I. INFORMATION DISCLOSURE STATEMENTS NOT ACKNOWLEDGED

The Applicant filed Information Disclosure Statements with PTO Form 1449 on September 20, 2007, June 18, 2008, and July 3, 2008, but Applicant has not received initialed forms to acknowledge receipt and consideration of the references. Applicant respectfully requests that the Office provide an initialed copy of the IDS forms with the next communication.

II. ISSUES RELATING TO CITED ART

A. 35 U.S.C. § 103(a) —*TERUHI*, *RFC 1889*, AND *RFC 2676*

Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Teruhi* et al., U.S. Pub. No. 2003/0072269 (hereinafter *Teruhi*), which includes *RFC 1889* as cited by *Teruhi*, in view of Apostolopoulos et al., INTF *RFC 2676* “QoS Routing Mechanisms and OSPF Extensions”, August 1999 (hereinafter *RFC 2676*). The rejection is respectfully traversed.

**Claim 1**

Claim 1 as amended recites in part:

*“sending a first data packet **only** to a particular router **that the first data packet has not already visited;***  
*wherein the particular router is associated with a first actual time that is a shortest time among all times associated with routers in the set of routers;*  
*wherein the first actual time has been updated with a previous actual time taken for a previous data packet to travel to a previous destination indicated by the previous data packet;”*

No combination of *Teruhi*, *RFC 1889*, and *RFC 2676* teaches or suggests the bolded feature, nor is it alleged to. None of the individual references describe restricting the selection of the next hop router to only those that have not already been visited by the same data packet that is being routed (the first data packet).

This subject matter introduced into Claim 1 is similar to the subject matter of cancelled Claim 10. The Office Action relies on lines 1-2 of page 327 of *Di Caro* to allegedly teach the similar subject matter. However, *Di Caro* does not only route packets to routers where the packet has not already visited as seen in this expanded excerpt of the cited passage:

*"3. At each node k, each traveling agent headed towards its destination d selects the node n to move to choosing among the neighbors it did not already visit, or over all the neighbors in case all of them had been previously visited"*

and in lines 1-3, Step 4 of *Di Caro* on page 327:

*"4. If a cycle is detected, that is, if an ant is forced to return to an already visited node, the cycle's nodes are popped from the ant's stack and all the memory about them is destroyed. If the cycle lasted longer than the lifetime of the ant before entering the cycle, (that is, if the cycle is greater than half the ant's age) the ant is destroyed."*

*Di Caro* only selects a previously unvisited router when one is available, but will force an ant to revisit a router if all neighboring routers have already been visited by the ant. *Di Caro* describes **cycle detection** and handling rather than the **loop prevention** technique described in the specification. Loop prevention is achieved by **only** selecting a neighboring router that has not been previously visited.

For at least the reasons given above, Claim 1 is patentable over *Teruhi*, *RFC 1889*, and *RFC 2676* as well as patentable over *Di Caro* and *RFC 2676*. Reconsideration is respectfully requested.

## Claims 2-7

Claims 2-7 are dependent upon and thus include each and every feature of Claim 1 discussed above. Therefore, Claims 2-7 are allowable for at least the reasons given above with respect to Claim 1. Reconsideration is respectfully requested.

### B. 35 U.S.C. § 103(a) — *RFC 1247* AND *RFC 2676*

Claims 8 and 18-20 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over and J. Moy et al., IETF *RFC 1247* "OSPF Version 2", July 1991 (hereinafter *RFC 1247*) in view of *RFC 2676*. The rejection is respectfully traversed.

Claims 8 and 18-20 each recite similar features as those discussed above with respect to Claim 1. Distinguishing features of Claim 1 are not, and are not alleged to be, provided by *RFC*

2676. RFC 1247 fails to disclose the features of Claim 1 that are missing in RFC 2676. Thus, both RFC 1247 and RFC 2676 fail to provide features of Claims 8 and 18-20. Therefore, Claims 8 and 18-20 are patentable for at least the same reasons discussed above as to Claim 1. Reconsideration is respectfully requested.

C. 35 U.S.C. § 103(a) —*Di Caro* AND RFC 2676

Claims 1-25 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Gianni *Di Caro* et al., “AntNet: Distributed Stigmergetic Control for Communications Networks”, Journal of Artificial Intelligence Research, 12/1998 (hereinafter *Di Caro*) in view of RFC 2676. The rejection is respectfully traversed.

**Claim 1**

Claim 1 has already been shown above to be patentable over the combination of *Di Caro* and RFC 2676.

**Claims 8, 9, 18-20**

Claims 8, 9, and 18-20 recite substantially the same features as Claim 1 that were shown above to be patentable over the combination of *Di Caro* and RFC 2676. Thus, Claims 8, 9, and 18-20 are also patentable under 35 U.S.C. § 103(a) over the combination of *Di Caro* and RFC 2676 for at least the same reasons as for Claim 1. Reconsideration and withdrawal of the rejection is respectfully requested.

**Claim 11**

Claim 11 recites in part:

*“if any neighbor router in the set of neighbor routers is associated with an amount of time that is lower than the first amount of actual time, then updating the forward ant data packet to indicate a present router in a loop-avoidance router field of the forward ant data packet”*

There is no description of a loop-avoidance router field in an ant packet or anything equivalent to a loop-avoidance router field described in the cited art. The Office Action relies on lines 1-3, Step 4 of *Di Caro* on page 327 to allegedly teach the feature. This is the same passage that is quoted above in the arguments for Claim 1. The Office Action comments that this passage

describes “cycle avoidance.” This is incorrect. The passage describes cycle detection. The passage in *DiCaro*, “If the cycle lasted longer than the lifetime of the ant before entering the cycle...” suggests that an ant is allowed to enter a cycle, and thus a cycle is not avoided.

Furthermore, the cycle detection and resolution technique described in *Di Caro* does not mention using any structure equivalent to a loop-avoidance router field of the forward ant packet or updating such a packet field to indicate the present router.

Thus, for at least these reasons, no combination of *Di Caro* and *RFC 2676* provides all the features of Claim 11. Therefore, Claim 11 is patentable over the combination of *Di Caro* and *RFC 2676*. Reconsideration is respectfully requested.

### **Claims 2-7, 12-17 and 21-25**

Claims 2-7, 12-17 and 21-25 are dependent upon and thus include each and every feature of an independent claim that has been shown above to be patentable. Therefore, it is respectfully submitted that each of Claims 2-7, 12-17 and 21-25 is allowable for at least the reasons given above with respect to its independent base claim.

### **III. CONCLUSION**

For the reasons set forth above, Applicant respectfully submits that all pending claims are patentable over the art of record, including the art cited but not applied. Accordingly, allowance of all claims is hereby respectfully solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Respectfully submitted,  
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